APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/429,028	10/29/1999	CLAIRE BESSET-BATHIAS	Q56456	5444

			EXAMINER
7590	12/29/2004		SHAH, CHIRAG G

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ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/429,028	BESSET-BATHIAS, CLAIRE
	Examiner	Art Unit
	Chirag G Shah	2664

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _03 September 2004_ .

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _14-24_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _14-24_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

    1. ☒ Certified copies of the priority documents have been received.

    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

    3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

2.   Claims 14, 20-24, rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen et

al (U.S. Patent No. 5,802,051) in view of Subbiah et al (U.S. Patent No. 6,538,992).

Referring to claims 14, and 22-24, Petersen et al discloses a method and/or a device

controller for generating ATM cells for low bit rate application in figure 6 and in column 4, lines

58 to column 4, lines 56 (low bit rate connections into a same ATM connection by

simultaneously multiplexing more than one user data packet on a single minicell connection as a

function of transmission priority by employing a predefined transmission priority assignment

schedule and by providing a modified user data packet segmentation process). Petersen et al also

discloses in figure 1 and respective portions of the specification of a method of improving the

utilization of available bandwidth when ATM is used in conjunction with a low bit rate data

application. Petersen et al discloses in table 1 of employing a predefined transmission priority

assignment scheduling but fails to explicitly discloses of scheduling transmission times for ATM

cells in a way that as long as there is data available from at least one of a plurality of low bit rate

connections, the transmission times are spaced according to a cell rate negotiated for a

corresponding ATM connection; and multiplexing the low bit rate connections into the ATM

connection so that the ATM cells are transmitted at scheduled transmission times.

scheduling transmission times for ATM cells in a way that as long as there is data

available from at least one of the plurality of low bit rate connections, the transmission

times are spaced according to a cell rate negotiated for a corresponding ATM connection

[Subbiah teaches in col. 3, lines 12-59 of scheduling ATM cell transmission times based

on AAL2 negotiation procedures (ANP). Subbiah further discloses in the respective

sections that after a successful negotiation in the ANP, a packet associated with the call

request, such as a voice/data packets is placed into a queue that matches the QoS

requirement required by the user, accordingly, the packets are serviced from the queues

based on the QoS. Subbiah furthermore, discloses in col. 6, lines 24-36, where voice

packets (having the same QoS) from different users can be multiplexed on a single ATM

connection. As disclosed in col. 7, lines 59 to column 8, lines 11, if a user request s CBR

service, then voice packets belonging to that particular user can be placed in a single

ATM cell payload and sent immediately to avoid any delay. Thus, the transmission times

for packets (each ATM cell) are spaced (constantly) according to the CBR negotiated for

a corresponding connection as long as there is data available from one low bit rate

connection; and

multiplexing the low bit rate connections into the ATM connection so that the

ATM cells are transmitted at scheduled transmission times [as disclosed in col. 7, lines 59

to column 8, lines 11 and in claim 1, the Voice packets (low bit rate connections) having

same QoS can be placed (multiplexed) in a single ATM cell payload and sent

immediately to avoid any delay. In other words as disclosed in claim 1, the (ATM) cells
with common QoS requirement are queued into one queue, and then multiplexed (claim
1) and transferred (claim 1)].

In addition to reiterate, Subbiah clearly discloses in claim 1 of obtaining the QoS
requirement for the packets successfully negotiated for transfer (negotiated cell rate);
placing each of the packets successfully negotiated for transfer into one of the queues
with a same QoS requirement as the QoS obtained from the memory; multiplexing one or
more of the packets having like QoS requirement within each of the queues into cells
having like QoS requirements and transferring the packets via the cells according to the
corresponding QoS requirement signifying scheduling transmission times for ATM cells
in a way that as long as there is data available from at least one of the
connections/queues, the transfers (transfer times) are based on the QoS (cell rate
negotiated) for corresponding ATM/Low bit Application connection. In other words, if
the QoS/cell rate negotiated is CBR or VBR (as described in col. 7, lines 59-67 and claim
1), the ATM cells with common QoS requirement are queued into one queue, and then
multiplexed and then are transferred (claim 1) and spaced (having CBR according to the
QoS requirement) for a corresponding connection from a local peer entity to the remote
peer entity.

Therefore, it would have been obvious to one of ordinary skill in the art to modify
the teachings of Petersen to include the teachings of Subbiah in order to control delay and
improve efficiently and bandwidth usage for the ATM cell transmissions.

Referring to claims 20 and 21, Petersen teaches in figures 1 and 2 of multiplexing being carried out at ATM adaptation Layer level. Petersen also discloses in column 5, lines 15 to column 6, lines 50 that low bit rate connections are assigning different priorities. Petersen further discloses in column 3-6 of multiplexing (inter-priority) of a plurality of low bit rate connections into a same ATM connection by simultaneously multiplexes more than one user data packet on a single minicell connection as a function of transmission priority by employing a predefined transmission priority assignment schedule and by providing a modified user data packet segmentation process). Petersen fails to disclose that the multiplexing step includes an intra-priority multiplexing for multiplexing low bit rate connections of the same priority. Subbiah discloses in claims 1 and 12 and respective portions of the specification of multiplexer that combines/multiplexes (intra-priority) one or more packets within each of the queues having same QoS requirements into cells having like QoS requirement. Subbiah further discloses in claims 2 and 13 that intra-priority multiplexing is supported by using AAL2 (ATM Adaptive Layer 2). Subbiah further discloses in column 4 that plurality of queues having different QoS requirements are provided in a ATM service module at the local peer entity and that the queues with the different QoS requirement are multiplexed in a ATM cell and transmitted via a ATM connection to the remote peer, implying that inter-priority multiplexing takes place at the ATM layer. Therefore, it would have been obvious to one of ordinary skill in the art to modify the teaching of Petersen to include the teachings of Subbiah in order to efficiently transfer packets form the local entity to the remote entity based on different QoS requirements.

Claims 15-18 rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen (U.S.

Patent No. 5,802,051) in view of Subbiah as applied to claims 1, 8-11, 14, and 20-24 above, and

further in view of Depelteau (U.S. Patent No. 6,404,767).

Referring to claim 18, Petersen in view of Subbiah teaches of scheduling ATM cell

transmission times in a way as to keep ATM cell spacing constant and multiplexing a plurality of

low bit rate connection into a same ATM connection in generating ATM cells for low bit rate

applications. Petersen in view Subbiah also teach of performing transfer negotiations for the

corresponding ATM connection. However, Petersen in view of Subbiah fail to disclose that

ATM cell spacing is kept as close as possible to a cell rate negotiated renegotiated for the

corresponding ATM connection. Depelteau teaches of systems and methods for implementing

ABR flow control in ATM switches. Depelteu discloses in column 2, that each cell contains an

explicit rate parameter which may be adjusted as the cells pass through the ATM switches in the

path in either the forward or backward direction and that explicit rate contained in the cells when

it returns to the source is the maximum rate at which the source can send cells and it may be

reduced as low as the minimum cell rate guaranteed to the source during connection

establishment. Thus, a cell rate is negotiated and renegotiated. Therefore, it would have been

obvious to one having ordinary skill in the art at the time of the invention to modify Petersen in

view of Subbiah's invention to include what Depelteau teaches in order for cell rate to have the

ability to renegotiate allowing sufficient rates to establish a connection.

Referring to claims 15-17, Peterson in view of Subbiah teaches of scheduling ATM cell

transmission times in a way as to keep ATM cell spacing constant and multiplexing a plurality of

low bit rate connection into a same ATM connection in generating ATM cells for low bit rate

applications. Petersen in view of Subbiah fails to teach that the cell rate is a service category

type of PCR, CBR or DBR and BCR and ABR type. Depelteau discloses in columns 6-8 that

cells are generated on a per ABR connection basis and that each port has a fixed output capacity.

At any instant in time, portions of this capacity must be allocated to various traffic classes

including VBR, CBR and ABR. Each virtual connection of any type including ABR is always

guaranteed. For each port, high priority traffic such as VBR and CBR is serviced first.

Therefore, it would have been obvious to one having ordinary skill in the art at the time of

invention to modify Petersen in view of Subbiah's invention to include the teaching of including

the capacity to allocate service type for various traffic scenarios as taught by Depelteau to

provide a better more effective utilization of bandwidth.

3.   Claim 19 rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen in view of

Subbiah as applied to claims 14, and 20-24 above, and further in view of Gritton (U.S. Patent

No. 5,940,397).

        Referring to claim 19, Petersen in view of Subbiah fail to explicitly teach that when no

ATM cell is sent when there is no data available from any low bit connections, and method

includes a further step of referencing scheduling step with respect to the next availability of data

from at least one of low bit application. Gritton teaches of a method and an apparatus for

scheduling and transmitting ATM data cells. Gritton discloses in claim 1, figures 2, 3, 5b, 5c and

respective portions of the specification of scheduling ATM cell transmission times in a way as to

keep ATM cell spacing as constant as possible. This is accomplished via communication

between the segmenter and scheduler, indicating that the VC has cells stored within memory and

may be transmitted. Scheduler, then determines the most appropriate time to transmit a cell making sure to keep cell spacing as constant as possible in order to avoid any traffic congestion or bottlenecking. Gritton further teaches in columns 4 and 5 that scheduling methods effectively multiplex cells from a plurality of VCs, and allow each VC to have a unique transmission rate that can be dynamically adjusted and can support a plurality of transmission priority levels. Thus, multiplexing a plurality of connections into a same ATM connection having the scheduled ATM cell transmission times takes place Schedule. Gritton also discloses in column 11 that if no ATM cell is sent when there is no data available for any of the connection, a method further includes referencing and scheduling with respect to the next availability of data from at least one of the connections. Therefore, it would have been obvious to modify the teachings of Petersen in view of Subbiah to include the teachings of Gritton in order to reduce delay and increase throughput and efficiency.

Response to Arguments

4.   Applicant's arguments filed 09/03/04 have been fully considered but they are not persuasive.

Referring to claims 14 and 22-24, Applicant argues that the combination of Petersen and Subbiah references do not disclose or suggest a method or apparatus for "scheduling transmission times for ATM cells in a way that as long as there is data available from at least one of a plurality of low bit rate connections, the transmission times are spaced according to a cell rate negotiated for a corresponding ATM connection." Examiner respectfully disagrees and redirects Applicant to Subbiah reference specifically in claim 1. Subbiah clearly discloses in

claim 1 of obtaining the QoS requirement for the packets successfully negotiated for transfer

(negotiated cell rate); placing each of the packets successfully negotiated for transfer into one of

the queues with a same QoS requirement as the QoS obtained from the memory; multiplexing

one or more of the packets having like QoS requirement within each of the queues into cells

having like QoS requirements and transferring the packets via the cells according to the

corresponding QoS requirement signifying scheduling transmission times for ATM cells in a

way that as long as there is data available from at least one of the connections/queues, the

transfers (transfer times) are based on the QoS (cell rate negotiated) for corresponding

ATM/Low bit Application connection. In other words, if the QoS/cell rate negotiated is CBR (as

described in col. 7, lines 59-67 and claim 1), the ATM cells with common QoS requirement are

queued into one queue, and then multiplexed and then are transferred (claim 1) and spaced

(according to the QoS requirement) for a corresponding connection from a local peer entity to

the remote peer entity. Thus, the transmission times for packets (each ATM cell) are spaced

(constantly) according to the CBR negotiated for a corresponding connection as long as there is

data available from one low bit rate connection. Thus, Subbiah discloses and/or suggest the

claimed limitation. Therefore, claim 14 and 22-24 remain rejected.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as

set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing

date of this final action.

Any response to this final action should be mailed to:

Box AF
      Commissioner of Patents and Trademarks
      Washington, D.C. 20231

Or faxed to:

      (703)305-9051, (for formal communications; please mark "EXPEDITED
      PROCEDURE)

Or:

      (703)305-5403 (for informal or draft communications, please label "PROPOSED"
      or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chirag G Shah whose telephone number is 571-272-3144. The

examiner can normally be reached on M-F 6:45 to 4:15, 2nd Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs

November 3, 2004

Ajit Patel

Primary Examiner